

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petition of)
)
CITY AND COUNTY OF SAN FRANCISCO,)
SAN FRANCISCO BAYKEEPER, ET AL.,)
CALIFORNIA DENTAL ASSOCIATION,)
ET AL.)

ORDER NO. WQ 95-4

For Review of Cleanup and Abatement)
Order No. 94-149 by the California)
Regional Water Quality Control)
Board, San Francisco Bay Region.)
NPDES Permit No. CA0037664. Our file)
Nos. A-938, A-938(a), and A-938(b).)

BY THE BOARD:

On October 19, 1994, the California Regional Water Quality Control Board, San Francisco Bay Region (SFBRWQCB), reissued a National Pollutant Discharge Elimination System (NPDES) permit¹ in Order No. 94-149 for the City and County of San Francisco's Southeast Water Pollution Control Plant. On November 18, 1994, the State Water Resources Control Board (SWRCB or Board) received three petitions for review of the permit. The petitioners include the City and County of San Francisco (the discharger); San Francisco BayKeeper, Clean Water Action, and Clean Water Fund (collectively BayKeeper); and the California

¹ NPDES permits are issued, pursuant to Section 402 of the federal Clean Water Act, Title 33, United States Code, Section 1251 et seq. (Clean Water Act or Act), to regulate the point source discharge of pollutants to surface waters. 33 U.S.C. § 1342. Under Section 402, permits may be issued either by the federal Environmental Protection Agency (EPA) or by states with approved programs. California has an approved program. In California, waste discharge requirements issued by the Regional Water Quality Control Boards (RWQCBs) or by the State Water Resources Control Board pursuant to Water Code, Division 7, Chapter 5.5, are equivalent to NPDES permits.

Dental Association and San Francisco Dental Society (collectively CDA). The petitions are legally and factually related and have, therefore, been consolidated for purposes of review. See 23 C.C.R. § 2054. For the reasons which are explained below, the Board remands Order No. 94-149 and related documents to the SFBRWQCB with directions to review and revise the order and documents in accordance with the findings of this Order.

I. BACKGROUND

The discharger operates one of the few combined sewer systems on the West Coast.² That is, the Southeast Water Pollution Control Plant (Southeast Plant or Plant) receives flows from sewers that are designed to transport both stormwater runoff and sanitary sewage.

The Southeast Plant treats flows from the Southeast and North Shore areas of San Francisco, the Bayshore Sanitary District, and a small part of the North San Mateo County Sanitation District. The discharger presently discharges an average dry weather flow of 67 million gallons per day (mgd) of secondarily treated wastewater from the Southeast Plant through a deep water outfall located at Pier 80 (the Army Street terminal) into the northern portion of San Francisco Bay. The Plant has a peak secondary treatment capacity of 150 mgd.

During storm events, the Plant converts to a wet weather operations mode. In addition to the secondary treatment

² There are 1,100 combined sewer systems nationwide. The majority of these are located on the East Coast. Two cities in California, San Francisco and Sacramento, operate combined sewer systems.

capacity of 150 mgd, the Southeast Plant can provide an additional 60 mgd of primary treatment, for a total wet weather treatment capacity of up to 210 mgd.

The deep water outfall has a design capacity of 100 mgd. During wet weather, effluent flows in excess of 100 mgd are discharged into Islais Creek through the Quint Street outfall. Generally, when this occurs, overflows are also occurring from the discharger's bayside combined sewer overflow diversion structures.³ Discharges through the Quint Street outfall receive less than a minimum initial dilution of 10 to 1. Discharges receiving less than a 10:1 dilution are prohibited under the Water Quality Control Plan, San Francisco Bay Basin, Region (2) (December 1986) (1986 Basin Plan), unless an exception is granted.⁴ In 1984 the SFBRWQCB issued Order No. 84-029, requiring the discharger to cease and desist from discharging waste through the Quint Street outfall in violation of the discharge prohibition. This order was amended in 1991 by Order

³ Discharges from the combined sewer overflow diversion structures are governed by a separate NPDES permit.

⁴ The basin plan prohibits the discharge of:

"Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1...."
Page IV-8.

Exceptions to the prohibition may be granted where:

- (1) a discharge is approved as part of a reclamation project;
- (2) an inordinate burden would be placed on the discharger relative to the beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means; or
- (3) it can be demonstrated that net environmental benefits will be derived as a result of the discharge. *Id.*, pp. IV-8 through IV-9.

No. 91-153, which directed the discharger to select an alternative by November 1, 1994, addressing the wet weather discharges to Islais Creek. The discharger is currently studying various alternatives, including construction of a deep water outfall, construction of a cross-town transport system, implementation of a regional reclamation project, and requesting an exception from the prohibition in the 1986 Basin Plan. In addition, the discharger has been constructing facilities to mitigate the impacts of the wet weather discharge into Islais Creek. The facilities are designed to ensure that only secondarily treated effluent is discharged to the creek by the end of 1996.

On October 19, 1994, the SFBRWQCB reissued an NPDES permit for discharges from the Southeast Plant. The discharger, BayKeeper, and CDA have all filed petitions for review of the permit and have requested that the SWRCB rescind, modify, or remand the permit to the SFBRWQCB.⁵ This order remands the permit, Fact Sheet, and a related staff memorandum to the SFBRWQCB.

II. CONTENTIONS AND FINDINGS⁶

1. Contention: Petitioner BayKeeper has requested that the SWRCB modify Order No. 94-149, or remand it to the

⁵ In addition, petitioner CDA requested a stay of Order No. 94-149. This request was denied without prejudice by letter, dated March 6, 1995, from Walt Pettit, executive director of the SWRCB, to petitioners.

⁶ This section of the Order does not address all of the issues raised by petitioners. The Board finds that the issues which are not addressed are insubstantial and not appropriate for SWRCB review. See People v. Barry, 194 Cal.App.3d 158, 239 Cal.Rptr. 349 (1987); 23 C.C.R. § 2052.

SFBRWQCB with directions to modify the order, to delete certain language regarding discharges from the Quint Street outfall. Specifically, BayKeeper objects to the inclusion of language in the order that authorizes discharges from the Quint Street outfall, provided that the discharges are consistent with Cease and Desist Order No. 84-029, as amended, and comply with specified effluent limitations or requirements.⁷ BayKeeper contends that this language violates the 1986 Basin Plan and proscriptions against antibacksliding contained in the Clean Water Act. See 33 U.S.C. § 1342(o).⁸

Finding: For the reasons explained in this finding, the Board concludes that the language at issue is inconsistent with the 1986 Basin Plan and, therefore, must be revised. As

⁷ The challenged provisions are:

(1) Discharge Prohibition A.1., which prohibits discharge at any point at which the wastewater does not receive a minimum initial dilution of 10:1, "except the wet weather discharges into Quint Street Outfall (waste 002) will be allowed, as long as they are consistent with the Cease and Desist Order No. 84-029 and its subsequent amendments...."

(2) Discharge Prohibition A.2, which prohibits the bypass or overflow of untreated or partially treated wastewater to surface waters, "except during a wet weather day the bypass or overflow will be allowed, as long as they are consistent with" specified effluent limitation provisions of the permit. These provisions establish effluent limitations for wet weather discharges from the Quint Street outfall both prior and subsequent to completion of certain Southeast Plant improvements.

(3) Effluent Limitation B.1.1.(a), which establishes effluent limitations for wet weather discharges from the Quint Street outfall prior to the construction of the Southeast Plant improvements. The limitations include the following constituents: settleable matter, BOD, total suspended solids, oil and grease, and total residual chlorine.

(4) Effluent Limitation B.1.3., which requires that effluent discharged from the Quint Street outfall after completion of the Southeast Plant improvements receive full secondary treatment and adequate disinfection.

⁸ In general, the antibacksliding provisions of the Clean Water Act prohibit the inclusion of effluent limitations in an NPDES permit which are less stringent than the comparable effluent limitations contained in the previous permit. This proscription is subject to numerous exceptions.

discussed above, the 1986 Basin Plan prohibits the discharge of waste to surface waters at any point at which the discharge receives less than a 10:1 minimum initial dilution, unless an exception is granted. See fn. 4, *supra*. The SFBRWQCB has not granted an exception to this prohibition for discharges from the Quint Street outfall.

Under Chapter 5.5, Division 7 of the Water Code, NPDES permits issued by the SWRCB or a RWQCB must ensure compliance with applicable provisions of the Clean Water Act, together with any more stringent limitations necessary to implement water quality control plans. Water Code § 13377. In addition, permits issued pursuant to Chapter 5.5 must comply with other provisions of Division 7 to the extent that these provisions are consistent with Chapter 5.5. *Id.* § 13372. One such provision is contained in Water Code Section 13263, which requires that waste discharge requirements implement the relevant water quality control plan. See *id.* § 13263.

Section 402 of the Clean Water Act mandates that NPDES permits ensure compliance with Section 301 of the Act. 33 U.S.C. §§ 1311, 1342. Section 301 requires that discharges achieve compliance with specified technology-based requirements and, no later than July 1, 1977, any more stringent limitations necessary to achieve compliance with state water quality standards. *Id.* § 1311(b). Water quality standards consist of the designated uses of a waterbody, together with water quality criteria to protect such uses. *Id.* § 1313(c)(1)(2)(A). Water quality criteria are defined as "constituent concentrations, levels, or

narrative statements, representing a quality of water that supports a particular use," and would include discharge prohibitions. 40 C.F.R. § 131.3(b).⁹

Thus, under both the Water Code and the Clean Water Act, the NPDES permit for the Southeast Plant had to ensure compliance with the 10:1 discharge prohibition contained in the 1986 Basin Plan, unless an exception was granted. To the extent that the permit authorized wet weather discharges from the Quint Street outfall, without granting an exception to the discharge prohibition, the permit was inconsistent with the 1986 Basin Plan and, hence, with these statutory requirements.¹⁰ In particular, the SFBRWQCB erred in allowing, in Order No. 94-149, discharges in violation of the prohibition, provided that the discharges were in compliance with Cease and Desist Order No. 84-029 and met the specified effluent limits.

The Board recognizes that the discharger is currently unable to comply with the discharge prohibition. In the interim, until the discharger is able to achieve compliance, the appropriate legal mechanism to regulate the discharge is through an enforcement order, such as Cease and Desist Order No. 84-029. The enforcement order can appropriately include interim effluent limitations regulating the discharge, as well as a time schedule to achieve compliance with the prohibition.

⁹ Water quality criteria are synonymous with water quality objectives under state law. Compare *id.* with Water Code § 13050(h).

¹⁰ Because of this conclusion, the Board finds it is unnecessary to address petitioner BayKeeper's antibacksliding argument.

2. Contention: The discharger contends that the SFBRWQCB's policy of limiting dilution credit to a maximum of 10:1 is arbitrary and unsubstantiated. The discharger also maintains that the dilution policy constitutes a de facto amendment of the 1986 Basin Plan.

Finding: The 1986 Basin Plan does not limit dilution for deep water discharges to a maximum of 10:1. The SFBRWQCB has recently adopted a revised water quality control plan, which does contain this restriction. If the revised plan fails to go into effect, Order No. 94-149 must be revised to be consistent with the dilution provisions of the 1986 Basin Plan.

Treated wastewater exits the discharger's deep water outfall through a submerged diffuser located about 810 feet from shore at a depth of 42 feet below mean lower low water. The discharge receives greater than 10:1 initial dilution. Order No. 94-149, Finding 2. The discharger submitted an engineering report to the SFBRWQCB indicating that, based upon computer modeling and dye studies, initial dilution ranges from 30:1 to 60:1. Fact Sheet.

The Fact Sheet states that current SFBRWQCB policy is to limit dilution credit to a maximum of 10:1. The Fact Sheet explains that this cautious approach is based upon concern over the cumulative effects of multiple sources of pollutants to the estuary and the difficulty in predicting actual dilution in an estuary due to tidal circulation. *Id.*

EPA regulations provide that states may include in their state water quality standards policies generally affecting

their application, such as mixing zones, low flows and variances. 40 C.F.R. § 131.13. Also included would be dilution policies.

The 1986 Basin Plan currently authorizes dilution for discharges from submerged effluent discharge structures.¹¹ The 1986 Basin Plan does not, in fact, contain a policy limiting dilution for deep water discharges to a maximum of 10:1. Such a policy is not explicitly stated. The only rationale for implying a maximum 10:1 dilution policy would be based upon a comparison of the shallow water and deep water effluent limitations for toxic pollutants contained in Table IV-1 of the 1986 Basin Plan. 1986 Basin Plan, p. IV-3. This comparison suggests that the deep water limitations for 8 out of the 12 constituents listed assume a 10:1 dilution.¹²

The Board is of the opinion that a policy limiting dilution to 10:1 must be clearly and explicitly articulated in the 1986 Basin Plan before it can be uniformly applied. See also the discussion in Section II.10, *infra*, of this Order. Because

¹¹ Specifically, the 1986 Basin Plan states:

"In general, the objectives are intended to govern the concentration of pollutant constituents in the main water mass. The same objectives cannot be applied at or immediately adjacent to submerged effluent discharge structures. Zones of initial dilution within which higher concentrations can be tolerated will be allowed for such discharges."

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from submerged outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally."
Basin Plan, p. III-1.

¹² These constituents are: arsenic, chromium (VI), copper, lead, nickel, silver, zinc, and PAHs. The deep water limitations for cadmium, cyanide, mercury, and phenols do not assume a 10:1 dilution, as compared to the shallow water limitations.

the 1986 Basin Plan currently authorizes dilution for deep water discharges, with no cap on the allowable dilution ratio, Order No. 94-149 is inconsistent with the 1986 Basin Plan.

As explained in Section II.3 of this Order, *infra*, the SFBRWQCB can, on a case-by-case basis, take action more stringent than the existing water quality control plan, where necessary to protect beneficial uses or prevent nuisance. See Water Code §§ 13363, 13277. The necessity for such action, however, must be articulated in the permit findings, which must be supported by evidence in the record. See Topanga Assn. for a Scenic Community v. County of Los Angeles, 11 Cal.3d 506, 515, 113 Cal.Rptr. 836, 522 P.2d 12 (1974) (Topanga). The SFBRWQCB record does not contain the requisite findings and evidentiary support for a maximum dilution ration of 10:1 for the Southeast Plant discharge.

We note that on June 21, 1995, the SFBRWQCB adopted a revised water quality control plan, which does include a maximum 10:1 dilution policy for deep water discharges. See Amendments to the Water Quality Control Plan for the San Francisco Bay Basin, adopted June 21, 1995 (1995 Basin Plan Amendments), Ch. 4. On July 20, 1995, the revised plan was approved by this Board. If the revised plan is approved by the Office of Administrative Law (OAL), pursuant to the Administrative Procedure Act (APA), Government Code Section 11340 et seq., the revised plan can form the basis for limiting dilution for discharges from the Southeast Plant's deep water outfall to a maximum of 10:1. See Gov't. Code § 11353. If the 1995 Basin

Plan Amendments are disapproved, however, the SFBRWQCB must review the discharger's request for a dilution allowance in accordance with the language in the 1986 Basin Plan.

3. Contention: The discharger and CDA object to the final effluent limitation of 0.21 micrograms per liter ($\mu\text{g}/\text{l}$) as a monthly average for mercury contained in Order No. 94-149. Order No. 94-149, Effluent Limitations B.6.2. Both petitioners allege that the limitation is not substantiated by either the permit findings or the Fact Sheet. Additionally, the discharger contends that there is no evidence that the 1986 Basin Plan objective for mercury is being exceeded and, therefore, no justification for tightening the limit which was contained in the previous permit.¹³

Finding: The Board finds that the findings of Order No. 94-149 and the Fact Sheet do not support the final monthly average effluent limitation for mercury. Table III-2A of the 1986 Basin Plan contains water quality objectives for toxic pollutants applicable to San Francisco Bay downstream of the Carquinez Straits. P. III-7. The objective for mercury is 0.025 $\mu\text{g}/\text{l}$ as a four-day average and 2.1 $\mu\text{g}/\text{l}$ as a one-hour average. *Id.* The 1986 Basin Plan also contains effluent limitations, in Table IV-1, to implement some of the toxic pollutant objectives in Table III-2A. *Id.*, p. IV-3. The

¹³ Petitioner CDA's objections to the final mercury limitations appear to stem from petitioner's assumption that there are no valid numeric objectives for mercury applicable to San Francisco Bay. As the following text indicates, this assumption is erroneous.

effluent limitation for mercury for both shallow and deep water discharges is 1 $\mu\text{g}/\text{l}$ as a daily average. *Id.*

The discharger's previous permit, Order No. 89-101, contained an effluent limitation for mercury of 1 $\mu\text{g}/\text{l}$. Discharger's current permit contains a final limit for mercury in Table 6.2 of 0.21 $\mu\text{g}/\text{l}$ as a monthly average and 1 $\mu\text{g}/\text{l}$ as a daily average. Order No. 94-149, Effluent Limitation B.6.2.

Neither the permit nor the Fact Sheet explain the relationship between the final permit limitation of 0.21 $\mu\text{g}/\text{l}$ as a monthly average and the objectives in Table III-2A or limitations in Table IV-1 of the 1986 Basin Plan for mercury.¹⁴ The permit states that the monthly and daily limitations in Table 6.2 are derived from EPA's water quality criteria. Order No. 94-149, Effluent Limitation B.6.2, fn. a.

As discussed above, permits issued pursuant to Chapter 5.5 of the Water Code must contain effluent limitations necessary to implement the relevant water quality control plan. Water Code § 13377; *see id.* § 13263. A RWQCB may choose, on a case-by-case basis, however, to establish water quality-based effluent limitations which are more stringent than limitations

¹⁴ A staff memorandum, discussed in more detail in Section II.10, *infra*, of this Order, states that "[e]ffluent limits for mercury...should not be based on 1986 Basin Plan objectives, which are inadequate to protect beneficial uses; EPA Gold Book [criteria] should be used as the basis for mercury...effluent limits."

This memorandum was not included or referenced in either Order No. 94-149 or the Fact Sheet. In any event, the conclusion that the Basin Plan mercury objectives are inadequate to protect beneficial uses, without further elaboration and evidentiary support in the record, is legally insufficient to justify failing to implement the Basin Plan.

based upon the applicable water quality objectives where necessary to protect beneficial uses or prevent nuisance. See *id.*¹⁵ If a RWQCB takes this approach, the rationale for the more stringent limitations must be explained in the permit findings, which must be supported by evidence in the record. See Topanga, *supra*. In addition, the RWQCB must consider the factors specified in Water Code Section 13241,¹⁶ which apply to the adoption of water quality objectives on a permit-specific basis. Accord SWRCB Order No. WQ 94-8 at 8.

Order No. 94-149 does not contain appropriate findings supporting an effluent limitation for mercury more stringent than a limitation based upon the 1986 Basin Plan objectives. In addition, the permit does not indicate that the SFRWQCB has considered the factors specified in Water Code Section 13241 for adoption of a permit-specific objective for mercury. For these

¹⁵ More stringent limitations, for example, performance-based limitations, may also be imposed in some cases to implement federal antidegradation requirements. See 40 C.F.R. § 131.12.

¹⁶ The factors include:

- (a) Past, present, and probable future beneficial uses of water;
- (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
- (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
- (d) Economic considerations;
- (e) The need for developing housing within the region;
- (f) The need to develop and use recycled water.

reasons, the permit must be remanded to the SFBRWQCB for action consistent with the 1986 Basin Plan and Water Code.¹⁷

4. Contention: Petitioner CDA objects to the interim limit for mercury contained in Order No. 94-149 on the ground that the SFBRWQCB cannot legally authorize a compliance schedule for the final limit of 0.21 µg/l.

Finding: Order No. 94-149 establishes an interim effluent for mercury of 0.7 as a monthly and daily average. Order No. 94-149, Effluent Limitation B.6.2. The permit provides that the interim limit will be in effect from October 30, 1994 to September 30, 1998.

Section 301(b)(1)(C) of the Clean Water Act provides that NPDES permits must require compliance with water quality-based limitations by July 1, 1977. 33 U.S.C. § 1311(b)(1)(C). The extent to which NPDES permits can include compliance schedules to achieve applicable limitations, in light of Section 301(b)(1)(C), was addressed by the EPA Administrator in In the

¹⁷ As an alternative to adopting an objective for mercury on a permit-specific basis, it appears that the SFBRWQCB has a second alternative. Arguably, under the 1986 Basin Plan the SFBRWQCB could choose to implement the existing four-day average objective for mercury with an effluent limitation more stringent than the limitation of 1 µg/l specified in Table IV-1.

With respect to the effluent limitations contained in Table IV-1, the 1986 Basin Plan states that "[t]he Board will consider establishing more stringent limitations for other constituents as necessary to meet water quality objectives and protect beneficial uses in particularly sensitive areas." Basin Plan, p. IV-2. Conversely, "the Board will consider establishing less stringent limitations" where it can be demonstrated that the limitations will not have unacceptable adverse impacts on beneficial uses. *Id.* Despite the reference to "other constituents" in the first sentence, the use of the terminology "more or less stringent limitations" makes sense only if the more or less stringent limitations are compared to the existing limitations in Table IV-1. Therefore, it appears that "other constituents" means the constituents listed in Table IV-1. If the SFBRWQCB were to follow this approach, the SFBRWQCB would be required to adopt findings supporting the necessity to adopt a more stringent limitation for mercury than that contained in Table IV-1 in order to meet the 1986 Basin Plan mercury objective and to protect beneficial uses.

Matter of Star-Kist Caribe, Inc., NPDES Appeal No. 88-5 (Star-Kist Caribe). The decision held that, if a water quality standard was adopted prior to July 1, 1977 and did not undergo any substantive change after that date, immediate compliance is mandatory. See Star-Kist Caribe, slip op. at 10. The opinion also held that a compliance schedule can be included in a permit for a state water quality standard adopted or revised after July 1, 1977, only if the standard itself or the State's regulations implementing the standard specifically authorize a schedule of compliance. *Id.* at 20.

As explained previously, the basis for the final mercury limitation in Order No. 94-149 of 0.21 µg/l as a monthly average is unclear. In any event, the 1986 Basin Plan does not authorize schedules of compliance in permits at this time, regardless of whether the limit was based on the numeric mercury objective, a narrative toxicity objective, or some other rationale. Therefore, under the 1986 Basin Plan, the SFBRWQCB can only include an interim limit and schedule of compliance for mercury in an enforcement order.¹⁸

5. Contention: The discharger alleges that the copper limit in Order No. 94-149 is arbitrary and unsubstantiated.

Finding: The Board finds that the SFBRWQCB acted appropriately in deriving a numeric effluent limitation for copper from the narrative toxicity objective in the 1986 Basin

¹⁸ The 1995 Basin Plan Amendments do authorize schedules of compliance in permits. Basin Plan Amendments, Ch. 4. However, compliance schedules are limited to newly adopted water quality objectives or standards. See *id.*

Plan. However, as the Board discussed in Section II.2, *supra*, of this Order, the SFBRWQCB must reconsider the effluent limitation in light of the previous discussion on dilution if the 1995 Basin Plan Amendments are not approved by OAL. In addition, the permit findings and Fact Sheet must be revised as they relate to the copper limitations.

The 1986 Basin Plan does not contain an objective for copper for the waters of San Francisco Bay. Effluent limitations are included, however, for this constituent in Table IV-1. The limitations are a daily average of 20 $\mu\text{g}/\text{l}$ for shallow water discharges and of 200 $\mu\text{g}/\text{l}$ for deep water discharges. 1986 Basin Plan, p. IV-3. The discharger's previous permit contained an effluent limitation of 200 $\mu\text{g}/\text{l}$ for copper, based upon Table IV-1. Discharger's reissued permit contains an effluent limitation of 37 $\mu\text{g}/\text{l}$, as a daily average. Order No. 94-149, Effluent Limitation B.6.1.

Finding 18 of Order No. 94-149 explains the technical basis for the revised copper limit. The finding indicates that the limitation is based upon a site-specific copper objective adopted as a water quality control plan amendment by the SFBRWQCB on October 21, 1992.¹⁹ See SFBRWQCB Res. No. 92-128. This

¹⁹ Finding 18 states, in part:

"The Board amended the Basin Plan on October 21, 1992 to adopt a site-specific water quality objective of 4.9 $\mu\text{g}/\text{l}$ for copper for San Francisco Bay. The State Board did not approve this amendment on procedural grounds. In the best professional judgment of Regional Board staff, from a technical standpoint, the site-specific objective is currently the best available water quality objective that is protective of the most sensitive designated use of San Francisco Bay waters with respect to copper: habitat for aquatic organisms. The effluent concentration limit
(continued...)

amendment was followed by a later amendment establishing wasteload allocations for municipal and industrial point source dischargers and load allocations for storm water discharges and certain riverine sources, to reduce copper mass loadings to San Francisco Bay. See SFBRWQCB Res. No. 93-61. Both amendments were remanded, however, by the SWRCB in June 1994 to the SFBRWQCB for further consideration. See SWRCB Res. No. 94-51. Consequently, neither amendment is currently in effect. See Water Code § 13245.

The legal basis for the revised copper limit is not clear from the findings in Order No. 94-149. Since the site-specific objective is not in effect, presumably, the copper limit of 37 µg/l was derived from the existing narrative toxicity objective in the 1986 Basin Plan.²⁰ See 40 C.F.R. § 122.44(d); SWRCB Order No. 94-8, pp. 9-10.

Applicable EPA regulations governing the NPDES permit program provide that effluent limitations must be established for all pollutants which may be discharged at levels to cause, or which have the reasonable potential to cause an excursion above a water quality standard, including a narrative standard.

¹⁹ (...continued)
for copper in this permit is based on the site-specific objective for copper, which employed the 'water effect ratio' approach developed by the EPA...."

²⁰ The narrative toxicity objective states, in part:

"All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms...." Basin Plan, p. III-3.

40 C.F.R. § 122.44(d). A permitting authority has three options when developing numeric effluent limitations to implement a narrative objective. See *id.* § 122.44(d)(1)(vi). These include establishing effluent limitations: (1) using a calculated numeric criterion for the pollutant; (2) on a case-by-case basis, using EPA's water quality criteria, supplemented where necessary by other relevant information; or (3) on an indicator parameter for the pollutant of concern. *Id.* The Board assumes that the SFBRWQCB chose the second option, since the site-specific objective was derived from an EPA water quality criterion for copper, which was adjusted based on site-specific information.

The discharger contends that the SFBRWQCB's actions were arbitrary because the SFBRWQCB chose to implement only part of its proposed regulatory scheme for copper; that is, the SFBRWQCB implemented the site-specific objective but not the implementation plan, establishing wasteload and load allocations in order to meet the objective. Had the SFBRWQCB implemented the latter plan, the discharger contends that the effluent limitation for copper would have been higher. In addition, petitioner maintains that it was entitled to dilution credit for its discharge.

Assuming that the SFBRWQCB derived the copper limitation from the narrative toxicity objective, as discussed above, the SFBRWQCB acted appropriately. The applicable EPA regulations authorize the derivation of numeric effluent limitations in this manner; and these regulations have been upheld in court. See American Paper Institute, Inc. v. United

States Environmental Protection Agency, 996 F.2d 346 (1993). On the other hand, the SFBRWQCB had no legal basis for also implementing the implementation plan for the site-specific objective. As explained above, the plan was not approved by this Board and is not in effect. In addition, although arguably the SFBRWQCB could implement a wasteload allocation on a permit-specific basis, the record in this case contains no evidence supporting the establishment of a wasteload allocation for copper.

The Board has previously discussed the issue of dilution credit. On remand, the SFBRWQCB must reconsider the discharger's request for dilution credit if the 1995 Basin Plan Amendments do not become effective. In addition, the SFBRWQCB is directed to revise the permit findings and Fact Sheet as discussed in Sections II.8 and II.9 of this Order. Specifically, the permit findings should state that a numeric effluent limitation for copper is derived from the narrative toxicity objective, and that the limitation is necessary because the discharge of copper has the reasonable potential to cause an excursion above the narrative objective. The Fact Sheet must contain the calculations or analysis supporting the conclusion regarding "reasonable potential" and explaining the development of the numeric copper effluent limitation.

6. Contention: The discharger also objects to the effluent limitations for PAHs (polynuclear aromatic hydrocarbons), PCBs (polychlorinated biphenyls), and dioxin on the ground that the limits are arbitrary and unsubstantiated.

The discharger specifically objects to the SFBRWQCB's use of a cancer risk factor of 10^{-6} in calculating the limits for these constituents.

Finding: The Board finds that the SFBRWQCB's rationale for selecting 10^{-6} was appropriate. However, this rationale must be articulated in the permit findings and Fact Sheet.

Order No. 94-149 contains monthly and daily limitations for PAHs, PCBs and dioxin (referred to as TCDD equivalents) based upon EPA water quality criteria. Order No. 94-149, Effluent Limitation 6.2 and fn. a. The monthly limitations for these constituents, which are carcinogens, were calculated using a cancer risk factor of 10^{-6} . *Id.* The permit and Fact Sheet are silent on the rationale for selection of a 10^{-6} risk factor; however, the SFBRWQCB's Response to Comments for its October 19, 1994 meeting indicated that the risk level was selected because it is more protective of human health than 10^{-5} . The discharger contends that this explanation is inadequate.

EPA's water quality criteria guidance documents for toxic pollutants that are carcinogens present a range of concentrations corresponding to incremental cancer risks of one in one hundred thousand (10^{-5}) to one in ten million (10^{-7}). The risk ranges are presented as information only. In EPA's view, the selection of an appropriate risk level is a risk management decision appropriately left to the States.²¹

²¹ In the National Toxics Rule, Title 57, Code of Federal Regulations, Sections 60848-60923 (December 22, 1992), codified at Title 40, Code of Federal Regulations, Section 131.36 (National Toxics Rule or Rule), EPA promulgated water quality criteria for states that had not yet promulgated, or
(continued...)

The Board concludes that the SFBRWQCB's rationale for selecting a risk level of 10^{-6} was appropriate. The selection of a risk level is a management decision, which can be based primarily on policy considerations. It was within the SFBRWQCB's discretion to conclude that a conservative approach was warranted when faced with decisions involving public health protection. Cf. "Final Report of the Study Panel to the California State Water Resources Control Board" (March 1969) at 15 ("Conservatism in the direction of high quality should guide in the establishment of objectives.... A margin of safety must be maintained to assure the protection of all beneficial uses."). The Board further notes that the EPA human health criteria assume an average daily fish consumption value which may underestimate actual consumption for certain affected groups. A 10^{-6} risk level can help to account for such uncertainties which might result in a higher than expected risk.

Although the Board finds that the SFBRWQCB acted appropriately in selecting a 10^{-6} risk level, the SFBRWQCB's rationale must be expressed in the permit findings and Fact

²¹(...continued)
that had promulgated inadequate, criteria for toxic pollutants as required by Section 303(c)(2)(B) of the Clean Water Act. 33 U.S.C. § 1313(c)(2)(B). EPA relied on each state's existing policy or practice regarding the appropriate risk level for regulating carcinogens in surface waters to derive the risk level applicable to the affected state. The risk levels were either 10^{-5} or 10^{-6} , "either of which are consistent with EPA policy and with the requirements of the Clean Water Act." 57 Fed.Reg. at 60864. In the preamble to the Rule, EPA indicated that risk levels selected by the states which were less protective than 10^{-5} would need substantial support in the record. *Id.* at 60853. Additionally, the preamble stated EPA's belief that it would be reasonable for the states to conclude that carcinogens that bioaccumulate might justify a more protective risk level of 10^{-6} but that a less conservative level, such as 10^{-5} , might be appropriate for other carcinogens. *Id.* at 60865. Whether any state followed this approach, however, was entirely up to the state.

Sheet. Inclusion of the rationale in the Response to Comments failed to adequately inform the discharger and the public of the basis for the effluent limitations for carcinogens. On remand, the permit findings and Fact Sheet should be revised as discussed in Sections II.8 and II.9, *infra*, of this Order.

7. Contention: The discharger alleges that the effluent limitations for chlorinated pesticides are arbitrary and unsubstantiated. The discharger contends that the limitations are arbitrary because neither the permit findings nor Fact Sheet indicate that these substances have the reasonable potential to cause an excursion over the narrative toxicity objective in the 1986 Basin Plan.

Finding: The Board finds that the permit findings and Fact Sheet must be revised to support the inclusion of numeric effluent limitations for chlorinated pesticides. Order No. 94-149 contains effluent limitations for aldrin, dieldrin, heptachlor, toxaphene, chlordane, endrin, and hexachlorobenzene. Table B.6.2. The permit states that the limitations are derived from EPA water quality criteria.

Although the permit findings and Fact Sheet do not explain the basis for including the effluent limitations in the permit, the Board assumes that the limitations were included in order to implement the narrative toxicity objective in the 1986 Basin Plan. See discussion in Section II.5 of this Order, *supra*. Numeric effluent limitations would be required for the chlorinated pesticides at issue if they could be discharged at levels which have the reasonable potential to violate the

narrative toxicity objective. See 40 C.F.R. § 122.44(d). As discussed in Sections II.8 and 9, *infra*, of this Order, a finding to this effect should have been included in the permit; and the Fact Sheet should have referenced the data and calculations supporting this conclusion.

8. Contention: The discharger and CDA contend that the permit findings, particularly Findings 17 and 18, are inadequate.

Finding: The Board agrees with petitioners' contentions. Finding 17 of Order No. 94-149 states generally that the effluent limitations for toxic pollutants contained in Order No. 94-149 are based on "the plans, policies, and water quality objectives and criteria of the Basin Plan, Quality Criteria for Water (EPA 440/5-86-001, 1986; Gold Book), Applicable Federal Regulations..., the National Toxics Rule..., and Best Professional Judgement." Finding 18 explains the technical basis for the copper effluent limitation. See Section III.5. of this Order, *supra*, and fn. 19.

Under the decision of the California Supreme Court in Topanga, *supra*, an administrative agency rendering a quasi-judicial decision must set forth findings to "bridge the analytic gap between the raw evidence and ultimate decision or order." Topanga, 11 Cal.3d at 515. Finding 17 is too vague to meet this standard. The basis for effluent limitations for individual constituents cannot be determined from this finding. The finding fails to identify those effluent limitations which are based upon numeric objectives in the 1986 Basin Plan and those which are

derived from the narrative toxicity objective. In particular, Finding 17 fails to explain the basis for the mercury limit, its relationship to the 1986 Basin Plan numeric objective, or the necessity for a more stringent limitation than one based upon the applicable objective.

Finding 18 adequately explains the technical basis for the copper effluent limitation. The finding fails to explain, however, that the effluent limitation implements the narrative toxicity objective.

In addition, the Board concludes that findings should be included in the permit to explain: (1) the necessity for including effluent limitations for those toxic constituents, including copper, for which there are no numeric water quality objectives in the Basin Plan (e.g., effluent limitations are necessary because these constituents could be discharged at levels which have the reasonable potential to cause an excursion over the narrative toxicity objective in the 1986 Basin Plan); (2) the specific derivation of these effluent limitations (i.e., EPA water quality criteria, the National Toxics Rule, or other source); (3) the rationale for the risk level selected for effluent limitations for carcinogens; (4) the basis for final effluent limitations based upon performance when these limits are lower than water quality-based limitations (e.g., performance-based limitations are necessary to comply with federal antidegradation requirements (see 40 C.F.R. § 131.12) or other appropriate rationale); and (5) the basis for the dilution ratio selected for the discharge.

9. Contention: The discharger and CDA also allege that the Fact Sheet for Order No. 94-149 is inadequate.

Finding: For the reasons explained in this finding, the Board concurs with petitioners. The Fact Sheet contains the same general statement as that contained in Finding 17 regarding the basis for the toxic pollutant effluent limitations. The Fact Sheet does not discuss the effluent limitation for copper.

EPA regulations implementing the NPDES permit program describe the required contents of a Fact Sheet.²² A Fact Sheet must contain "[a] brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions...." 40 C.F.R. § 124.8(b)(4). In addition, the Fact Sheet must contain "[a]ny calculations or other necessary explanation of the derivation of specific effluent limitations and conditions...." *Id.* § 124.56(a).

The Fact Sheet in this case failed to meet these standards. The Fact Sheet did not explain the legal or technical basis for the water quality-based limitations, whether derived from the numeric objectives or the narrative toxicity objective in the 1986 Basin Plan, nor for the performance-based limitations included in Order No. 94-149. With respect to the effluent limitations implementing the narrative toxicity objective, the Fact Sheet did not explain the rationale for concluding that these substances could be discharged at levels which had the

²² The regulations covering Facts Sheets are applicable to state permitting programs. See 40 C.F.R. § 123.25(27) and (32); see also 23 C.C.R. § 2235.2.

reasonable potential to violate the narrative toxicity objective, nor did the Fact Sheet include the calculations or other explanation of the derivation of specific effluent limitations. Further, the Fact Sheet did not address the risk level selected for effluent limitations for carcinogens. On remand, the SFBRWQCB is directed to revise the Fact Sheet for Order No. 94-149 in accordance with this Order and the applicable regulations.

10. Contention: The discharger contends that portions of the permit and Fact Sheet were based on a SFBRWQCB staff memorandum, containing directives which were not adopted as regulations, as required under the APA, and which constitute illegal amendments to the 1986 Basin Plan. In particular, the discharger alleges that the memorandum contains rules requiring SFBRWQCB staff to use a site-specific water quality objective for copper to develop effluent limitations for copper and to include numeric effluent limitations for acute and chronic toxicity in permits. The discharger alleges that both of these rules are based upon water quality control plan amendments which were adopted by the SFBRWQCB but never approved by the SWRCB. The third rule referred to by the discharger is the dilution policy previously discussed in Section II.2, *supra*, of this Order.

Finding: The Board concludes that the dilution policy contained in the staff memorandum does violate the APA and provisions of the Water Code governing the amendment of water quality control plans. Conversely, the Board finds that language in the memorandum concerning toxicity objectives and a site-

specific copper objective are not regulatory.²³ The Board will remand the memorandum to the SFBRWQCB for action consistent with these findings.

The memorandum in question was a memorandum, dated September 19, 1994, signed by SFBRWQCB staff and approved by its executive officer, to SFBRWQCB staff (Memorandum). Among other topics, it addresses NPDES permit language for the inclusion of water quality-based effluent limitations for toxic pollutants and the use of dilution in setting effluent limitations.

The Memorandum mandates that staff follow a policy limiting dilution, for discharges achieving greater than 10:1 dilution, to a maximum of 10:1.²⁴ The Memorandum states that this policy is based upon the 1986 Basin Plan and best professional judgment. As discussed previously, however, the 1986 Basin Plan does not limit dilution for deep water dischargers to a maximum of 10:1.

The policy set forth in the Memorandum is, in fact, a regulation. It sets forth a "rule... or standard of general application or the amendment, supplement, or revision of [a]

²³ The discussion which follows addresses only the issues raised by the discharger with respect to the staff memorandum. The Board expresses no opinion on the remaining contents of the memorandum.

²⁴ Specifically, the Memorandum states:

"Until a formal dilution policy is adopted by the Regional Board, staff will implement the following policy based on the 1986 Basin Plan and best professional judgment. The following paragraph describes how dilution is applied to effluent limits for dischargers that achieve at least a 10:1 dilution (i.e., 'deep water dischargers') in this region, and should be included in fact sheets for NPDES permits."

rule... or standard adopted by a state agency to implement, interpret, or make specific the law enforced or administered by it...." Gov't Code § 11342(g). The policy was developed to, essentially, amend, supplement, or revise the existing 1986 Basin Plan provisions on dilution. The policy was not adopted in accordance with the requirements of the APA and, hence, is invalid under that law.

The policy was also not adopted in accordance with the procedures specified in the Water Code for amending a water quality control plan. See §§ 13240-13247. The procedures include notice and a hearing prior to formal adoption by the RWQCB. In addition, amendments must be approved by the SWRCB as well as the Office of Administrative Law before they become effective. *Id.* § 13245; Gov't Code § 11353(b)(5). For these reasons, the Board concludes that the Memorandum must be remanded to the SFBRWQCB for action consistent with this Order.

With respect to toxicity limitations, the Memorandum states that "[n]umeric effluent limitations for acute and chronic toxicity should be included in permits based on the narrative toxicity objective, federal regulations (40 CFR 122.44(d)..., and best professional judgment." The Memorandum further states that, based on a review of discharger toxicity data, the SFBRWQCB "expect[s] to find that...limitations from the invalid 1992 amendments are achievable by the discharger, and will be able to set those limitations in permits...." The first sentence quoted above is clearly not a regulation, but rather a statement of existing law. As explained previously, RWQCBs are required to

implement their water quality control plans, all of which include a narrative toxicity objective. Similarly, the federal regulations require inclusion of whole effluent toxicity limitations in permits whenever there is a reasonable potential for an excursion above a narrative toxicity standard. See 40 C.F.R. § 122.44(d)(1)(v). The second quoted sentence, likewise, does not establish a rule or standard of general application, but rather is a statement of staff's expectations. The Memorandum, in particular, does not mandate the use of the toxicity limitations from the 1992 water quality control plan amendments.

Finally, the Memorandum provides, with respect to copper limitations, that, in the absence of an applicable numeric water quality objective for copper, the SFBRWQCB "may" still use the EPA water quality criteria for copper of 2.9 µg/l in developing effluent limitations to implement the narrative toxicity objective." The Memorandum also states that staff "should implement" the copper site-specific objective previously adopted by the SFBRWQCB "in effluent limitations (4.9 shallow, 37 deep) based on best professional judgment in using the modified EPA Gold Book value in conjunction with the 1986 Basin Plan narrative water quality objective." The Memorandum also includes "recommended" permit findings that cover both implementation of the EPA criteria for copper and the site-specific copper objective. The Memorandum does not mandate the use of the site-specific copper objective and, thus, does not establish a rule or standard of general application.

11. Contention: The discharger argues that the SFBRWQCB cannot rely on the narrative toxicity objective in the 1986 Basin Plan as the basis for water quality-based numeric effluent limits in NPDES permits, but that the SFBRWQCB must adopt site-specific objectives or a new water quality control plan.

Finding: The Board does not agree with this contention. The EPA regulations specifying the three methods for states to interpret state narrative toxicity objectives so as to develop chemical-specific effluent limitations have been upheld by the courts. See American Paper Institute, Inc. v. United States Environmental Protection Agency, *supra*. In the absence of specific statewide or regional water quality objectives for specific pollutants, the Board concludes that it is completely appropriate for a RWQCB to rely upon an existing narrative toxicity objective and to use the objective as the basis for developing chemical-specific effluent limitations, in compliance with the applicable federal regulations. See 40 C.F.R. § 122.44(d); 23 C.C.R. § 2235.2.

12. Contention: CDA contends that Order No. 94-149 is a water quality control plan and that it must be adopted as a regulation under the APA.

Finding: CDA appears to argue that, if a RWQCB adopts a water quality objective on a permit-specific basis, as authorized under Water Code Section 13263, the RWQCB must comply with the APA because the objective constitutes a regulation. CDA extends this argument to the implementation of a narrative

toxicity objective by the development of a chemical-specific numeric effluent limitation. CDA contends that, in the latter case, the RWQCB has adopted an objective and must comply with the APA.

CDA's contentions are erroneous for several reasons. First, the adoption of waste discharge requirements or NPDES permits pursuant to the Water Code is specifically exempted from the APA. See Gov't Code § 11352. Even assuming, for the sake of argument, however, that they were not exempt, neither the adoption of a permit-specific objective nor the implementation of a narrative objective through the development of numeric effluent limitations for a particular permit constitutes a regulation. A regulation, as discussed previously, is a rule or standard "of general application". Gov't Code § 11342(g). A permit-specific objective is, of course, specific only to the permittee. Similarly, chemical-specific effluent limitations derived from a narrative toxicity objective are specific to the permittee. In neither instance is the RWQCB adopting a rule "of general application".

IV. CONCLUSIONS

Based upon the above discussion, the SWRCB concludes as follows:

1. The provisions of Order No. 94-149 which authorize discharges from the Quint Street outfall under certain conditions violate the Basin Plan.
2. The maximum 10:1 dilution allowance for the Southeast Plant discharge is inconsistent with the 1986 Basin

Plan. Order No. 94-149 must be revised if the 1995 Basin Plan Amendments do not become effective.

3. The findings of Order No. 94-149 and Fact Sheet do not support the final monthly average mercury effluent limitation.

4. Order No. 94-149 cannot legally include an interim effluent limitation for mercury.

5. The SFBRWQCB acted appropriately in deriving a numeric effluent limitation for copper from the narrative toxicity objective. However, the SFBRWQCB must reconsider the limitation if the dilution provisions of the 1995 Basin Plan Amendments do not become effective. In addition, the permit findings and Fact Sheet provisions regarding the copper limit must be revised.

6. The SFBRWQCB acted appropriately in selecting a cancer risk level of 10^{-6} for PAHs, PCBs, and dioxin; however, the permit findings and Fact Sheet must be revised to explain the rationale for selection of this level.

7. The permit findings and Fact Sheet are inadequate and must be revised to be consistent with applicable regulatory requirements.

8. The dilution policy contained in the Memorandum is regulatory and was implemented in violation of the APA and the Water Code.

9. The SFBRWQCB acted appropriately in implementing the narrative toxicity objective in the Basin Plan, in the

absence of site-specific objectives or a new water quality control plan.

10. Order No. 94-149 is not a water quality control plan and need not be adopted as a regulation under the APA.

V. ORDER

IT IS HEREBY ORDERED that Order No. 94-149, the Fact Sheet, and Memorandum are remanded to the SFBRWQCB for review and revision consistent with the discussion and findings of this Order.

CERTIFICATION

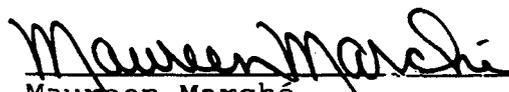
The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 21, 1995.

AYE: John Caffrey
Mary Jane Forster
Marc Del Piero
John W. Brown
James M. Stubchaer

NO: None

ABSENT: None

ABSTAIN: None



Maureen Marché
Administrative Assistant to the Board

